

## Appendix F

### Design Principles

The following design principles are guidelines for publishers to use in creating materials that will allow access for all students.

#### Design Principles for Perceptual Alternatives

- Consistent with federal copyright law, provide all student text in digital format so that it can easily be transcribed, reproduced, modified, and distributed in Braille, large print (only if the publisher does not offer such an edition), recordings, American Sign Language videos for the deaf, or other specialized accessible media exclusively for use by pupils with visual disabilities or other disabilities that prevent the use of standard materials.
- Provide written captions or written descriptions or both in digital format for audio portions of visual instructional materials, such as videotapes (for those students who are deaf or hearing impaired).
- Provide educationally relevant descriptions for those images, graphic devices, or pictorial information essential to the teaching of key concepts. (When key information is presented solely in graphic or pictorial form, it limits access for students who are blind or who have low vision. Digital images with verbal descriptions provide access for those students and also provide flexibility for instructional emphasis, clarity, and direction.)

#### Design Principles for Cognitive Alternatives

- Use “considerate text” design principles, which consist of:
  - Adequate titles for each selection
  - Introductory subheadings for chapter sections
  - Introductory paragraphs
  - Concluding or summary paragraphs
  - Complete paragraphs, including a clear topic sentence, relevant support, and transitional words and expressions (e.g., *furthermore*, *similarly*)
  - Effective use of typographical aids (e.g., boldface print, italics)
  - Adequate, relevant visual aids connected to the print (e.g., illustrations, photos, graphs, charts, maps)
  - Manageable versus overwhelming visual and print stimuli
  - Identification and highlighting of important terms
  - List of reading objectives or focus questions at the beginning of each selection
  - List of follow-up comprehension and application questions
- Provide optional information or activities to enhance students’ background knowledge. (Some students may face barriers because they lack the necessary background knowledge. Pretesting before beginning an activity will alert

teachers to the need for additional preparation. Instructional materials may include optional supports for background knowledge, to be used by students when needed.)

- Provide cognitive supports for content and activities: (1) provide assessment to determine background knowledge; (2) summarize those key concepts from the standards that the content addresses; (3) provide scaffolding for learning and generalization; and (4) build fluency through practice.

### **Design Principles for Means of Expression**

- Explain in the teacher's edition that a variety of ways exist for students with special needs to use the materials and demonstrate their competence; for example, for students who have dyslexia or who have difficulties with physically forming letters, writing legibly, or spelling words. Suggest in the teacher's edition modifications that teachers can use to allow students to access the materials and demonstrate their competence. Examples of modifications of means of expression might include (but are not limited to) students' use of computers to complete pencil and paper tasks and use of on-screen scanning keyboards, enlarged keyboards, word prediction, and spellcheckers.
- Publishers should provide support materials that will give students opportunities to develop oral and written expression.